

## PROCEEDINGS OF THE CLUB

### MINUTES FOR THE MEETING OF MAY 15, 1940

The meeting of the Torrey Botanical Club held at the New York Botanical Garden on May 15, 1940, was called to order by the President, Dr. B. O. Dodge, at 3:30 P.M.

Twenty-five persons were present.

The minutes of the meeting of May 7 were adopted as read.

Mrs. Mary E. Slavin, Doubleday Doran & Co., 14 West 49th St., New York City, and Mr. Paul Frese, 70 East 45th St., New York City, were elected to annual membership.

Mr. Devereux Robinson, Hudson View Apartments, 183rd St. and Pinehurst Ave., New York City, was elected to associate membership.

The resignations of Prof. T. C. Frye, Department of Botany, University of Washington, Seattle, Wash., and Miss Elizabeth T. Ojerholm, 807 East 14th St., Austin, Tex., were reported with regret.

The scientific lecture of the afternoon was presented by Dr. E. B. Matzke of Columbia University. The speaker's abstract follows:

In 1682 Grew likened cells to the "froth of beer or eggs," and since that time there have been frequent comparisons between the shape of cells in tissues and that of bubbles in foam. Throughout the nineteenth century, from Mirbel in 1802 through Gray in 1887, cells were thought of commonly as twelve-sided, like compressed spheres in "cannonball stacking," though Bernhardt and Duchartre considered them fourteen-sided. Carrying in mind the investigations and deductions of Plateau on soap films, of Kelvin on the division of space, and of Thompson on the form of cells, Lewis studied carefully the three-dimensional shape of 250 cells in undifferentiated tissues—pith, fat tissue, and precartilage—and found that they had an average of 13.97 faces. He concluded that such cells have an average of fourteen faces and that they approximate the fourteen-sided figure of Lord Kelvin, of which eight sides are hexagonal and six are square. More recently Marvin has very carefully studied and modeled 100 *Eupatorium* pith cells, which have an average of 13.37 faces and are roughly divisible into two groups, the larger with slightly more than fourteen sides, the smaller with slightly fewer.

Analyzing the shapes by compressing lead shot, Marvin found that such shot, of uniform size, varied in number of faces from 8.41 to 14.16, depending on the extent to which "intercellular" spaces were eliminated, while the peripheral shot had 10.75 sides as an average. Other investigations disclosed that when small shot are mixed with large and compressed, the small shot have fewer than fourteen contacts, the large more than fourteen.

More recently, investigations have been made on the three-dimensional shape of bubbles in foam, using a technique by which the volume of each

bubble is precisely the same and central as well as peripheral bubbles in a mass may be studied in three dimensions. The average number of faces of 225 peripheral bubbles is 10.98, corresponding closely with the data on peripheral shot, and with the average of eleven faces found for epidermal cells by Lewis; the average number of faces of 300 central bubbles of a mass is 13.69, approximating the results of Lewis and Marvin on cells, and also the data on the lead shot. No one "type" that is "ideal" or most commonly approached has been found. Pentagonal faces occur most often in the bubbles.

Contact and pressure systems, illustrated by the lead shot, and surface tension systems, illustrated by bubbles in foam, have marked similarities in shape to cells in undifferentiated tissues.

Respectfully submitted,

CLYDE CHANDLER

Recording Secretary

#### MINUTES OF THE MEETING OF OCTOBER 1, 1940

The meeting of the Torrey Botanical Club held at the Brooklyn Botanic Garden on October 1, 1940, was called to order by the President, Dr. B. O. Dodge, at 8:30 P.M.

Fifty-one members and friends were present.

The minutes of the meeting of May 15 were adopted as read.

Fourteen candidates were elected to annual membership: Dr. Robert S. Adamson, The University, Capetown, Union of South Africa; Dr. Carrolle E. Anderson, 55 Kilburn Rd., Garden City, L. I., N. Y.; Dr. Edward J. Backus, Biology Building, University of Wisconsin, Madison, Wis.; Dr. C. E. B. Bremekamp, Oostdelaan 14, Bilthoven, Netherlands; Miss Katherine Carr, Morehead State Teachers College, Morehead, Ky.; Dr. José Cuatrecasas, Instituto Botanico, Apartado 2535, Bogotá, Colombia; Mr. Julian Francis Detmer, "Edgemont," Tarrytown, N. Y.; Dr. Hiroshi Hara, Botanical Institute, Faculty of Science, Tokyo Imperial University, Tokyo, Japan; Dr. E. J. Kraus, Department of Botany, University of Chicago, Chicago, Ill.; Mr. Sami Rafei, Department of Botany, Oregon State College, Corvallis, Ore.; Dr. Harold A. Senn, Division of Botany, Central Experimental Farm, Ottawa, Ont., Canada; Dr. Aaron J. Sharp, Department of Botany, University of Tennessee, Knoxville, Tenn.; Miss Sara J. Stewart, 64 Linwood Rd., New Rochelle, N.Y.; and Dr. Nils E. Svedelius, Kyrkogårdsg., 5 A, Uppsala, Sweden.

Thirteen candidates were elected to associate membership: Miss Anna W. Clark, 719 Madison Ave., Scranton, Pa.; Mr.

Alfred Stanley Conyes, c/o 12th Floor, 148 Lafayette St., New York, N. Y.; Miss Julia E. Davison, Botany Department, Rutgers University, New Brunswick, N. J.; Miss Ethelwyn Doolittle, 317 West 45th St., New York, N. Y.; Mrs. Adolph Elwyn [Frances E.], Mount Airy Rd., Croton-on-Hudson, N. Y.; Mr. David Gottlieb, 1333 Boynton Ave., Bronx, N. Y.; Dr. George H. Hallett, Jr., 3353 82nd St., Jackson Heights, L. I., N. Y.; Mrs. George H. Hallett, Jr. [Ruth D.], 3353 82nd St., Jackson Heights, L. I., N. Y.; Mr. Walter J. Harmer, Hotel Orleans, 100 West 80th St., New York, N. Y.; Mr. Theodor Jakovleff, 862 Caldwell Ave., Bronx, N. Y.; Miss Kathryn L. Roller, 252 West 75th St., New York, N. Y.; Mrs. S. S. Vanderbilt, 527 West 121st St., New York, N. Y.; and Mr. W. D. Vanderbilt, 527 West 121st St., New York, N. Y.

Two resignations from annual membership, Miss Dorothy V. Smith, 31 Hoffman Rd., New Hyde Park, L. I., N. Y., and Miss Pauline Young, Department of Botany, Texas University, Austin, Tex., and one resignation from associate membership, Mr. Emanuel Lopez, 217 West 138th St., New York, N. Y., were accepted with regret.

The death of two members, Dr. Andrew J. Drushel, 209 Edgewood Ave., Westfield, N. J., on June 20, who had been an annual member of the Club since 1927, and Mrs. Richard M. Hoe, 11 East 71st St., New York City, a sustaining member since 1906, was reported.

As is the usual custom of the Torrey Club, this first meeting of the fall was devoted to reports of its members on their field trips and collecting experiences during the summer. The extensive travels of a large number of the members afforded an unusual wealth of material for these reports.

The meeting adjourned at 9:50 P.M., after which delightful refreshments were served by the Brooklyn Botanic Garden.

Respectfully submitted,

CLYDE CHANDLER  
Recording Secretary

#### MINUTES OF THE MEETING OF OCTOBER 16, 1940

The meeting of the Torrey Botanical Club held at the New York Botanical Garden on October 16, 1940, was called to order by the President, Dr. B. O. Dodge, at 3:30 P.M.

Twenty-three persons were present.

The minutes of October 1 were adopted as read.

Eighteen candidates were elected to annual membership: Mr. Libero Ajello, 1006 Furnald Hall, Columbia University, New York, N. Y.; Dr. Fred A. Barkely, Montana State University, Missoula, Mont.; Mrs. Albert C. Barnes, Merion, Pa.; Mrs. D. C. Boyce, 4214 Bigelow Blvd., Pittsburgh, Pa.; Dr. Myrle M. Burk, R. F. D. No. 2, Waterloo, Iowa; Mr. Virginius H. Chase, 107 Park Pl., Peoria Heights, Ill.; Dr. Lincoln Constance, Botany Department, University of California, Berkeley, Calif.; Dr. Frederick L. Fagley, 60 Gramercy Pk., New York, N. Y.; Dr. John E. Flynn, Biological Abstracts, University of Pennsylvania, Philadelphia, Pa.; Mrs. Grace B. Griffeth, 41 Lake View Pk., Rochester, N. Y.; Miss Sarah H. Harlow, 56 Hancock Ave., Yonkers, N. Y.; Mr. Howard K. Henry, Haverford College, Haverford, Pa.; Dr. John Austin Jump, State Teachers College, Frostburg, Md.; Mr. John Masek, Apopka, Fla.; Mr. W. Stanley Myers, 818 Eubanks St., Oklahoma City, Okla.; Mr. George A. Orrok, 21 East 40th St., New York, N. Y.; Mr. William Slater, 1060 Morewood Ave., Pittsburgh, Pa.; and Dr. George James Wilds, Hartsville, S. C.

Three candidates were elected to associate membership: Miss Phyllis M. Busch, 229 East 18th St., Brooklyn, N. Y.; Miss Cay Hillegas, 7 St. Luke's Pl., Montclair, N. J.; and Miss Dorothy E. Wheatley, 29 South Munn Ave., East Orange, N. J.

Dr. John Leutritz of the Bell Telephone Laboratories spoke on the preservation and biological materials. The speaker's abstract follows:

Telephone equipment is exposed to a wide variety of environmental conditions. Many of the materials of biological origin such as cotton, paper, jute, rubber and wood used in communications systems are exposed to a variety of living organisms which will cause their degradation and subsequent interruption of service. The major research has been carried on to ascertain suitable preservatives by field and laboratory assays for protecting these materials, especially from damage by fungi and termites.

Sporadic attacks by organisms such as carpenter ants, "fire ants," limnoria, toredo, ground squirrels, field mice and cockroaches have presented minor problems to the biologists in the Bell System.

Respectfully submitted,

CLYDE CHANDLER  
Recording Secretary